

FTD-TR-65-1944

AD630272

# TRANSLATION

METHOD OF MEASURING THE TEMPERATURE FIELD  
OF A STREAM OF EXHAUST GASES

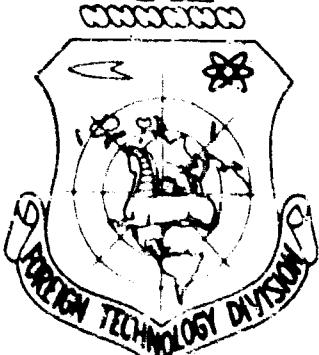
By

I. L. Frolovskiy

FOREIGN TECHNOLOGY  
DIVISION

AIR FORCE SYSTEMS COMMAND

WRIGHT-PATTERSON AIR FORCE BASE  
OHIO



1-18 0504 8

Cooley

**This translation was made to provide the users with the basic essentials of the original document in the shortest possible time. It has not been edited to refine or improve the grammatical accuracy, syntax or technical terminology.**

# UNEDITED ROUGH DRAFT TRANSLATION

METHOD OF MEASURING THE TEMPERATURE FIELD  
OF A STREAM OF EXHAUST GASES

BY: I. L. Frolovskiy

English pages: 2

SOURCE: Patent No. 169826 (Appl. No. 890881/26-10,  
March 25, 1964), 1 page.

TA5002967

THIS TRANSLATION IS A RENDITION OF THE ORIGINAL FOREIGN TEXT WITHOUT ANY ANALYTICAL OR EDITORIAL COMMENT. STATEMENTS OR THEORIES ADVOCATED OR IMPLIED ARE THOSE OF THE SOURCE AND DO NOT NECESSARILY REFLECT THE POSITION OR OPINION OF THE FOREIGN TECHNOLOGY DIVISION.

PREPARED BY:

TRANSLATION DIVISION  
FOREIGN TECHNOLOGY DIVISION  
WP-APB, ONG.

## METHOD OF MEASURING THE TEMPERATURE FIELD OF A STREAM OF EXHAUST GASES

I. L. Frolovskiy

Methods are known of measuring the temperature field of a stream of exhaust gases on the test stand of gas-turbine engines.

The proposed method is distinguished from the known ones by the fact that the measuring of the temperature field is done by setting the thermocouple not in the exhaust measuring devices but in the ring-shaped space between the engine and the exhaust system.

The undistorted temperature field to be measured in this section in no way differs from the temperature field in the operating system of the engine. The results of the measurements

obtained are converted mathematically with the taking into account of the vortex of the gas stream.

The proposed method enables one to improve considerably the precision of the measurements and shorten the time spent on the test.

#### Object of the Invention

A method of measuring the temperature field of a stream of exhaust gases, for example, on the test stand of gas turbine engines with the help of a thermocouple which has the distinguishing feature that for the purpose of improving the precision of the measurements and shortening the time spent on the test the thermocouple is set up between the engine and the exhaust system, the measuring of the temperature field is done in this section, and the results obtained are converted mathematically with the taking into account of the vortex in the gas stream.